Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at http://about.jstor.org/participate-jstor/individuals/early-journal-content.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact support@jstor.org.

GENERAL NOTES.

BOTANY.[1]

EXOTIC PLANTS AROUND SAN FRANCISCO BAY. — Many of the species of the Australian eucalypti and acacias mature their seeds in the climate of the shores and neighborhood of San Francisco Bay; many of the foreign geraniums and fuchsias also seed and fruit in the open air, though exposed more or less to the trade-winds; this is notably the case at the university grounds at Berkeley, which are in a line due east from the Golden Gate. — R. E. C. STEARNS.

PREISSIA COMMUTATA. — In a communication to the editor, Mr. Henry Gillman reports *Preissia commutata* (liverwort) at Laughing Fish River, and Eagle River, Michigan, at White-Fish Bay, Wisconsin, and several other localities on the Lakes. The plant occurs chiefly on sandstone.

SEQUOIA SEMPERVIRENS. — The statement on page 571 of the NATURALIST for 1875, of the discovery of a grove of colossal redwood trees, *Sequoia sempervirens*, proves to have been a hoax.

Very large specimens of this species are occasionally met with in the forests of the Coast Range. Six miles east of Stewart's Point and twenty-three miles west of Healdsburg, in Sonoma County, a fine specimen may be seen on the farm of James McCappin; it is not far from three hundred feet in height, and reaches up about one hundred feet to the first limb; it is quite straight and symmetrical, and measures seventy-one feet four inches in circumference at one foot from the ground; seven feet higher the circumference is forty-six feet. — R. E. C. STEARNS.

ÆSTIVATION OF THE FUCHSIA. — "In the books," the petals of the fuchsia are described as convolute. At my request, one of my students examined one hundred and fifty-nine flowers of various species, hybrids, and varieties. The petals exhibited sixteen different modes of arrangement with reference to each other. Only twenty-eight, about one sixth, were regularly convolute; of these, twenty-one twisted to the right, and seven to the left. Seventy-five flowers, nearly half of all examined, had one petal outside at each edge, the others in regular order. In thirty-seven cases, one petal was entirely outside, the one opposite to it had both edges covered by those next to it.

The foregoing remarks are kindred to those on Phyllotaxis of Cones, in the NATURALIST, vii. 449, and on Imbricative Æstivation, viii. 705. — W. J. BEAL.

VALLISNERIA SPIRALIS. — This plant, growing in moderately deep water in the south of Europe, has long been a favorite object of cultivation in aquaria, from the clearness with which the rotation of the protoplasm can be made out in the cells of the leaves, and the remarkable phenomena connected with its mode of fertilization, though the latter is less often witnessed, owing to the comparative rarity of the male plant. At a recent meeting of the Linnæan Society, of London, Mr. A. W. Bennett read a paper on the phenomena connected with the development of the peduncle of the female flower. This attains a final length of from three to four feet, and the rapidity of its growth is perhaps unequaled in the vegetable kingdom, being at its most rapid period at the rate of twelve inches in twenty-four hours. By marking off and measuring from time to time equal portions of the peduncle as they developed above the surface of the water, Mr. Bennett determined that the greatest activity of growth is displayed by the terminal portion of the flower-bud. A marked length of 2 inches from the flower-bud increased to 6.5 inches during the time that the remainder of the peduncle increased from 8.7 to 21.25 inches, showing a greater energy in the former case in the proportion of three to two. This presents a greater analogy to what is known to be the ratio of development of different parts in the case of roots than in the case of aerial stems, in which the zone of greatest activity of growth is generally at some considerable distance from the apex. Very few observations have, however, been made on the relative rate of growth of different portions of the same internode. When unfertilized, the peduncle of the female flower does not coil up and withdraw the flower below the surface, as is the case when pollen from a male flower has had access to it, but floats in a wavy manner on the surface; and under these circumstances the female flowers remain open for days and even weeks, as if waiting for the male flowers. — A. W. Bennett.

---

[1] Conducted by PROF. G. L. GOODALE.

Insectivorous Plants. — An interesting series of experiments confirmatory of the power stated by Darwin to be possessed by the leaves of *Drosera*, of absorbing nourishment through their glands, has been made by Dr. Lawson Tait, of Birmingham, England. He placed side by side plants of the common *D. rotundifolia*, some in the normal state, others with the roots pinched off close to the rosette of leaves, and with the leaves all buried, only the budding flower-stalk appearing above the sand; others with the roots and flower-stalk left on, but all the leaves pinched off, the roots being buried in the sand; and others again with the roots left on but appearing above the sand, some of the leaves buried and others exposed. These plants were all carefully washed with distilled water before being planted in silver sand which had been deprived of all organic matter, and carefully watched to prevent flies being caught; they were then fed, some with pure distilled water, others with a strong decoction of beef, and others with a very dilute solution of phosphate of ammonia. The conclusions arrived at from the series of experiments were that the plant can not only absorb nutriment by its leaves, but that it can actually live by their aid alone, and that it thrives better when supplied with nitrogenous material in small quantity. The nitrogenous matter is more readily absorbed by the leaves than by the roots, overfeeding killing the plant sooner through the leaves than through the roots alone, although the roots also certainly absorb nitrogenous matter. Dr. Tait had announced, independently of Mr. Darwin, the separation of a substance closely resembling pepsin from the viscid secretion of the glands of *Drosera dichotoma.*

In the September number of the (London) *Journal of Botany*, Mr. J. W. Clark details another important independent series of experiments with a similar result. He obtained large quantities of plants of *Drosera rotundifolia*, and a smaller quantity of *Pinguicula lusitanica*, and fed the leaves with the bodies of freshly-killed flies soaked in a solution of citrate of lithium. The needful precautions being taken to prevent the solution from being carried mechanically to other parts of the plant, after an interval of forty-five or fifty hours various portions of the plant were incinerated, and the ashes tested for lithium by the spectroscope. The result proved conclusively that the products of digestion, after absorption by the leaves, do enter the leaf-stalk, and are thence distributed to other parts of the plant. — A. W. BENNETT.

THE LIFE-HISTORY OF MOULDS. — A most important contribution to our knowledge of the lower forms of life is contained in Dr. Oscar Brefeld's Botanische Untersuchungen über Schimmelpilze (translated by Dr. W. R. McNab in the *Quarterly Journal of Microscopical Science* for October), containing an account of a series of very close observations on the life-history of *Penicillium glaucum* and others of the commonest moulds belonging to the same genus. Besides the well-known non-sexual mode of reproduction by conidia, Dr. Brefeld detected also on the mycelium bodies which he terms "sclerotia," the products of a sexual process. These contain the germ of a second generation produced from the fertilized carpogonium. There are therefore in *Penicillium* two stages or alternations of generations. The first or sexual generation is large, and capable of producing non-sexual spores. The second or non-sexual generation is small, and lives as a parasite on the nutrient tissue which surrounds it in the form of a sclerotium or sporocarp, which after a time develops asci and ascospores, these latter again producing the first sexual generation. This formation of ascospores seems to show that *Penicillium* must be placed in the group of Ascomycetes; and Brefeld considers that, from the striking resemblance of the minute structure of the sclerotia of *Penicillium* to that of the common truffle, this genus of moulds must be placed close to the Tuberaceæ. — A. W. BENNETT.

FUNGI HEAPED UP IN PINES BY SQUIRRELS. — Mr. J. S. Fay has sent us specimens of a fungus which he finds heaped up in considerable buantities in the crotches of young pine-trees not more than ten or twelve feet high, at Wood's Hole, Mass. Mr. Fay at first supposed that these heaps were accidental, but is now convinced that they were made either by squirrels or blue jays. The fungi are *Boleti*, and, as far as can be determined from their present condition, all of one species. There are several species of *Boletus* found at Wood's Hole, but they all grow on the ground. The most probable supposition is that the heaps were made by squirrels, and it would be interesting to know whether they actually eat the fungi. Perhaps some reader of the NATURALIST may be able to settle this point. — W. G. FARLOW.

MESSRS. H. O. HOUGHTON & Co., of the Riverside Press, design publishing shortly a series of sketches of the wild flowers of North America, from studies by the well-known botanical artist, Mr. Isaac Sprague. Those who are familiar with the accurate work of this skillful artist, particularly with his recent illustrations in Mr. Emerson's Trees and Shrubs of Massachusetts, will welcome the promised plates. Each portfolio of four colored plates is to be accompanied by descriptive letter-press, in which the more interesting details of structure and the habits of the plants will be explained.

BOTANICAL PAPERS IN RECENT PERIODICALS. — *Bulletin of the Torrey Botanical Club*, New York, December, 1875. *Epiphegus Virginiana* var. Rauana. (A description, by Mr. Austin, of an unusual form of beech-drops. The variation is believed by the editor to be due to feeble development.) *Omphalaria pulvinata* Nyl., a lichen new to North America, has been found at Poughkeepsie by Mr. W. R. Gerard.

Botanical Bulletin, December, 1875. Professor Porter gives a short list of double wild flowers. Several notes of local interest.

Comptes rendus des Séances de l'Académie des Sciences, lxxxi. 19. On exhaustion of the soil by apple-trees, by Is. Pierre. 20. On the theory of carpels, by Trécul. (A study of the pistil in one of the Amaryllis family.) 21. On fibres of remarkable length and tenacity, by Is. Pierre (from *Lavatera*, of the Mallow family). On fixation of atmospheric nitrogen in soils, by Truchot. On the formation, structure, and breaking-down of the swellings in the grape-vine produced by *Phylloxera*, by Cornu. On production of sugar in the beet-root, as affected by loss of foliage, by Cl. Bernard. Villiane, Duchartre, Boussingault, and Pasteur have notes on the same subject. On hydrated cellulose, by Girard. 24. On the destruction of vegetable substances mixed with wood, by Barral and Salvesat.

Flora, 1875, No. 27. Dr. Luerssen continues his description of the vascular Cryptogamia collected by Dr. Wawra in the Sandwich Islands. No. 28. Description of some lichens new to Europe, by W. Nylander.

Botanische Zeitung, November 12, 1875. Reports of societies: The association at *Graz:* Kirchner gave some account of the botanical works of Theophrastus, especially the volume on Vegetable Physiology. This was described as being marked by fullness of detail, and indicating acuteness in investigation. An annotated German translation is now promised. Von Ettingshausen gave reasons for believing that *Castanea* *vesca* is descended from *Castanea atavia.* No. 47. On the marine Phanerogams of the Indian Ocean and Archipelago, by Naumann. (An account of the flowering plants found in salt water during the cruise of the Gazelle.) Nos. 48, 49. Contributions to the history of the development of the Sporogonium in liverworts, by Kienitz-Gerloff. In reports of societies: *Berlin:* Ascheron on the distribution of the sexes of *Stratiotes*, a plant allied to *Sagittaria.* (The pistillate and staminate plants are for the most part widely separated.) Nos. 50, 51. On the development of cambium, by Dr. Velten. (Examining N. J. C. Müller's views.) In reports of societies: *Brandenburg:* Braun on the morphological nature of the tendrils in the gourd family (regarding them as leaves, and in divided tendrils each division as one leaf). *Berlin:* Brefeld on conjugating fungi.

Sitzungsberichte der kaiserlichen Akademie der Wissenschaften, lxx. i. Contributions to the morphology and biology of yeast, by Emil Schumacher, of Lucerne (detailing experiments to determine the influence of low temperature, etc., upon the life of the yeast plant). Lxx. ii. Investigations respecting the occurrence of lignin in the tissues of plants, by A. Burgerstein. (Experiments with aniline sulphate, by which he determined the absence of lignin in fungæ and algæ. It is found in a very few plant-hairs, in all wood-cells, but never in cambium. Many bast-cells have considerable lignin, but the sieve-cells hardly any. The most curious observation was that the walls of pith-cells in many plants are lignified, and the medullary rays also.

ZOÖLOGY.

BREEDING RANGE OF THE SNOW-BIRD. — During a flying visit paid to the mountains of Southwestern Virginia, the latter part of June, I found *Junco hyemalis* very common on the summits, at an altitude of forty-five hundred feet. A nest containing three eggs, about to hatch, was discovered within a stone's throw of the house. It was built on the ground, in a hole in a slight embankment. The mother-bird fluttered in sight within a few feet of me, of course rendering the identification absolute; besides, the birds were plentiful in the vicinity, and well known to the most obtuse of the aborigines of this primeval region. The southern extension of the species during the breeding season has only lately become known. Professor Cope mentions it in a former paper in the NATURALIST, and I have no doubt that he is right in crediting the species with a breeding range to the mountains of Georgia. This circumstance of its distribution explains the sudden appearances and disappearances of the species, according to the weather, during the colder portions of the year, at low levels. It can readily change its summer for its winter abode, and conversely, by a few hours' flight.

While on this subject, let me allude to the slip of the pen, or momentary aberration of mind, I don't know which, that led me to give the